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AUTHOR Bess, James L.
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ABSTRACT

The reasons for the persistence of the academic department in research universities and its efficacy in achieving the typical goals of the institution are examined. Six reasons that the academic department in its present form persists as an organizational entity are: inertia, the high status of research, funding sources and access to them, insulation from observation and accountability, alleged interdependence among missions, and the pedagogical necessity for knowledge-based departments. Various theories of departmentalization, including current notions of the determinants of alternative organizational structures as posed by "contingency theorists," are examined. The nature of the environments external to the institution and the varying demands of clients in those environments for different structures are explored. The impact of the "technology" of the many university tasks on the structure of the institution is discussed. A matrix form of organization in which sets of tasks or roles which are related to one another by necessary timing and sequencing are grouped in self-contained units is proposed. In such units, all the major resources needed to provide the service or produce the output are contained within the unit. It is suggested that the amount of inter-unit dependency should be as low as possible in order to minimize the costs of administrative coordination, and the amount of intra-unit loyalty and identification with unit goals and norms should be increased. (SC)

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GENERALISTS, SPECIALISTS, AND ACADEMIC ORGANIZATION

James L. Bess

Teachers College, Columbia University

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Association for the Study of Higher Education
The George Washington University
One Dupont Circle, Suite 630
Washington, D.C. 20036
(202) 296-2597

This paper was presented at the Annual Meeting of the Association for the Study of Higher Education held at the Washington Hilton in Washington, D.C. April 18-19, 1979. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

The purpose of this paper is to examine the reasons for the persistence of the academic department in research universities and to evaluate its efficacy in achieving the typical goals of the institution. The paper will explore also various theories of departmentalization, including current notions of the determinants of alternative organizational structures as posed by "contingency theorists." In particular, the paper will look at the nature of the environment(s) external to the institution and the varying demands of clients in those environments for different structures. It will examine also the impact of the "technology" of the many university tasks on structure. In the conclusion of the paper, a "matrix" form of organization is proposed and discussed.

Division of Labor

An examination of Western society over the last several centuries reveals the oft-noted shift from Gemeinschaft to Gesellschaft social systems (Tonnies, 1957). With industrialization, societies have moved increasingly from kinship systems where small homogeneous communities, often agricultural, gathered together to produce goods and services of mutual value to highly differentiated systems comprised of heterogeneous groups of people. The latter were and are typically engaged in a multiplicity of work and leisure enterprises with little apparent "necessary" connection. Differentiated systems, however, as Durkheim (1933) so well observed, tend to become anomic when positive social values of cooperation are not institutionalized. Communications across disparate sub-units or persons must be adequate to insure a commitment to the common good and to afford a sense of satisfaction with belonging to the system.

This phenomenon of progressive differentiation of function had its counterpart in higher education, beginning particularly in the latter part of the nineteenth century. The society's industrial and geographic expansion demanded new kinds of services from social structures which were not readily available at that time. For example, manufacturing enterprises needed new technologies to facilitate their efficiency and productivity, agriculture needed new products and new methods to serve a growing population, and, with urbanization, new knowledge about politics, government and social services was required. Traditional social and economic structures in existence were inadequate to provide for these new pragmatic demands, and society turned to the nineteenth century college which appeared to be the repository of existing knowledge. The country looked, in other words, to the American college to expand its functions -- from the more pastoral transmission of knowledge to an upper-class elite who would occupy leadership roles to a more substantive commitment to knowledge production and social service. And a number of colleges accepted these new functions or responsibilities quite easily. Learned men doubtless were flattered by the new authority given them. (In the past they were "merely" poor teachers). College presidents were eager to respond to industrial benefactors who would fund expansion of their colleges into new research and service domains.

But let us look for a moment at the organizational/structural response of these colleges to their new missions. In point of fact, new roles were added, but no new kinds of personnel were added. The new responsibilities accrued to the existing staff, namely the faculty. These latter were expected to become proficient in research and service, and to an extent

unanticipated by most, they did. The interest of faculty at universities was, of course, sparked by tales of and experience at European centers for research. As we will note later, in the universities the shift from teaching to other roles was overwhelming.

Not only were no new staff added, but no new organizational structures evolved in response to these changes. The existing division of labor by academic department was in place, and it seemed relatively easy to assume that the new functions could be addressed through the existing system (Lazarsfeld and Etzioni, 1971). In short, teachers became teacher-researcher-service personnel, and departments accommodated the new multiple functions.

It is interesting to note that, whereas in organizations other than colleges and universities which have more clearly differentiated and specialized units, coordination and linkage across these units is performed through administrative or bureaucratic modes, or at least through intermediaries who attend to the adjudication of conflicts (Lawrence & Lorsch, 1967). Note, however, that in higher education, there was no increased differentiation of specialized units (except, of course, for the expansion of realms of knowledge into new kinds of knowledge-based departments). In effect, then, linkages across the multiple missions of the fast-growing universities were expected to be accomplished by the individual workers themselves. The faculty member was to provide the coordination and collaboration across missions. Whereas in industrial organizations such interdependent departments as sales and manufacturing are linked, as noted above, by bureaucratic mechanisms, in colleges and universities where the separate functions

are not divided into different departments, the linkage is thus performed by and within each individual. We comment more extensively below on the nature of these connections and linkages across missions.

Persistence of the Department

But first it is necessary to examine in some greater detail the reasons that the academic department in its present form persists as an organizational entity. There are at least six: inertia, the high status of research, funding sources and access to them, insulation from observation and accountability, alleged interdependence among missions, and the pedagogical necessity for knowledge-based departments.

In the first place, the force of inertia makes the argument for continuation in the present form quite powerful. That is, the department appears to have worked reasonably well to date, so why change it? Secondly, in higher education (more so in universities) the reward system is, at least normatively, universalistic, meritocratic, and bound by rationality (Parsons & Platt, 1973--though, as Lewis, 1975, reports, the degree to which practice matches norms is somewhat suspect). These are the values most easily reinforced through research productivity where output is more quantifiable and measurable. Research also has more "status" than teaching, at least in universities. Research, or at least publishing productivity, is apparently at the top of the status hierarchy. Hence, the "technology" of the research function tends to dominate the organizational structure. That is, the function given most salience tends to force upon the organization a departmental form which meets its technological needs (cf. Hughes, 1958, p. 121; Freidson, 1976). Since as

noted earlier, the technology of research involves individualized work, one might question the functional necessity of having departments comprised of like-minded research scholars. Obviously, there is a latent function of some strength operating here--namely, the commonalities of professional achievement orientation which both assuage anxieties and stimulate competitiveness among members of a knowledge-based department.

There is another reason that the department persists. It is associated with access to sources of funding. Inasmuch as funding is also a "technological" feature of academic work (i.e., it speaks to the availability of capital for transforming the organization's raw material into finished products), the flow of funds to a department in exchange for research ideas has the effect of perpetuating the departmental form of organization. One reason is that research assistantships funded through outside funding tend to provide support for graduate students whose academic orientation is with a department, not with a school or a university. That is, funding for research not only supports the research functions in the department, but one of its byproducts is the support of the teaching of graduate students. The departmental form also may facilitate access to funding through the exchange of information about such external support among departmental colleagues.

The fourth reason for the persistence of the acdemic department is that it protects faculty from outside scrutiny. Whereas in most bureaucratic organizations supervision of activities of line personnel is accomplished through direct observation of processes as they are occurring or at least shortly after the product has been completed, in higher education this has not been sanctioned.

We neither observe faculty in their classrooms, nor do we measure the achievement of long-range changes in student values and dispositions so as to evaluate faculty performance. The reason most frequently offered for this general absence of direct observation and evaluation is that "academic freedom" requires both real autonomy and freedom from observation which might inhibit action. In point of fact, there are other more convincing reasons.

By combining the three functions which academic professionals presently serve--teaching, research and service--we allow the mystique of research, with its abstruse symbolism and recondite terminology, to slide over into the teaching domain. In addition, the research domain is given an aura of respectability through the alleged accountability structure of professional associations (e.g., the process of juried publications). Since in most professions clients are inhibited from questioning the technical competence of those delivering the service, so in higher education few feel free to ask publicly for an accounting from faculty. It is the structural reinforcement through the academic department of the faculty member's multiple functions which is necessary for the preservation of the separate functions (particularly teaching) from outside observation. The multiple-missioned department supports the merging of tasks and task images.

Still another reason given for the logic of the academic department as a structural form in its present configuration is that the functions performed by the faculty member are in some way linked. A common argument is that teaching informs research, and research must stand the test of explication through the teaching function. Or, research ideas must be examined in the marketplace of

commerce and industry. There is a powerful unexamined and perhaps unwarranted assumption operating in this argument. It is not that such linkages are necessary. Virtually all would agree with such an assertion. What is assumed without sufficient examination is the notion that the linkages among the functions can only be made "intrapersonally." It is assumed that the communication of the messages and products produced in the various functions--teaching, research and public service--can only be accomplished by an individual as he/she thinks through the impact of one on the other. Clearly such an assumption does not operate in industrial organizations. Here, linkages across units serving different functions are accomplished either bureaucratically (e.g., through memo or policy statement) or through the establishment of linking agents. It is necessary to determine whether such cross-functional linkages might be similarly managed in higher education with greater efficiency.

While it can be argued convincingly that intrapersonal coordination <u>within</u> technological boundaries is appropriate, the argument is not as strong across those boundaries. That is, it does seem to make sense that an individual faculty member establish the connections across the various kinds of research in which he/she is engaged. Similarly, a faculty member might be expected to connect various parts of the teaching mission--e.g., curriculum development and delivery of lectures (though, as we will show later even these may be linked bureaucratically). It is harder to make the argument that there is a necessary intrapersonal connection between knowledge-centered and process-centered roles or between these roles and across clients. For example, research may require faculty knowledge of very specialized kinds of information and with the research methods to access them. However, process-centered

roles such as teaching may require less knowledge of content but more skill in delivering that content.

It could be argued that knowing one's subject matter is not "necessarily" connected with the skill in delivering it. The latter requires knowledge of pedagogy, which is quite different from knowledge of material and research modes. Again, this is not to say that the domains do not have to be connected. It is only to be argued that the connections may as easily, if not better, be made through interpersonal/bureaucratic modes. One could imagine, for example, the training of teachers to be extraordinary lecturers or seminar leaders with minimal research skills and, indeed, with a knowledge of subject matter appropriate only to the course material they are teaching. Others, researchers, curriculum developers, psychologists of student growth, etc., would be responsible for advising the "lecturer" of the available material and its place in the larger curriculum. The lecturer, skilled in oral presentation and knowledgeable in areas of student cognitive and affective growth and development, could then design the presentation.

Still, the notion that there is some underlying cross-functional knowledge and skill which the faculty member must possess seems to carry considerable weight in current thinking in higher education. Whether there is some more basic faculty skill or orientation which transcends the three central academic roles is an open topic and one which needs further research.

The last of the above-noted reasons for the persistence of the department is the argument that it is necessary for curricular and pedagogical reasons. It is alleged that faculty must be aggregated according to the similarity of the knowledge paradigms used in their course offerings. The reason for this

is that there is assumed to be some connections among the offerings of a department. To avoid overlaps is syllabuses and to permit course sequences built on prerequisites, faculty must be in communication with one another. In reality, of course, communication among faculty with respect to curriculum is an uncommon pheromenon. Most faculty design their own courses in relative isolation from others. Departmental curricular committees are staffed by faculty whose interest in the subject is at best tangential to their prime interests and certainly does not involve the use of expertise in curriculum and pedagogy.

A counter argument could be posed that in fact faculty need only check with others occasionally about such matters. The argument has considerable validity because the usual assumption about undergraduate learning is that students, rather than faculty, make the connections among the courses, and that there is a stability in expectations and abilities. A related but far more important assumption is that students make connections between their course experiences across disciplines. Research evidence to validate this is lacking, but common sense and informal reports would seem to call it to question. A sine qua non for achieving the objectives of liberal and general education is that students have an opportunity for and are facilitated in integration disparate learning experiences. It could well be convincingly argued (and has been at, say, Santa Cruz), therefore, that teachers from <u>different</u> disciplines should be grouped together and that communication among them must be frequent. In sum, the argument for retaining the academic department for pedagogical reasons is a weak one, though it is voiced vociferously whenever the issue is raised. In truth, other latent reasons for the retention of the department are more persuasive.

Some Theories of Division of Labor

The problem of designing organizations for maximum efficiency and productivity is, according to March and Simon (1958:158), a problem of creating units of organization which can parsimoniously allocate activities both to organizational units and to individuals. These authors recognize, however, that the division of labor which is most effective for easily programmed tasks is not necessarily the same as one which appropriate to complicated tasks which require unique technological solutions. The question of the degree to which any one or all academic tasks can be "programmed" is the essential determining factor in the design of an efficient academic organization. Most of those concerned with the organization of the universities make the assumption that the tasks which faculty are asked to perform are essentially unprogrammable. It is assumed that to the extent that faculty are expected to deal with students as unique individuals, they are also prevented from creating standardized means of transforming those students from relatively immature to more more mature states. Indeed, even the suggestion that students might be treated more bureaucratically causes more raised hackles than almost any other subject.

Similarly, to the extent that each research endeavor in which a faculty member is engaged represents a hitherto uncharted domain of inquiry or knowledge, the technology associated with the task of transforming raw data into knowledge also apparently defies detailed programming. And, to complete the cycle, consulting is almost by definition a question of addressing faculty talents toward unique social or other problems. These twin variables used to define "technology" (number of exceptions in the stimuli and the degree of analyzability of search procedures) have been imaginitively

addressed in the work of Charles Perrow (1970). Part of the purpose of this section will be to examine this presumption of "un-programmability" and to explore the relatedness of the technologies of each of the three missions to one another. Such discussion will inform our understanding of the alternatives to departmentalization by academic discipline.

It is important to note that technology is only one of a number of independent variables which affect an organization's structure.* There are many others (cf. Friedlander, 1970). Among them are the following which are critical to this paper:

(1) the nature of the clients or beneficiaries of the institution (Blau & Scott, 1962; Etzioni, 1964)

(2) the nature of the environment in which the organization functions, particularly its stability and predictability (Lawrence & Lorsch, 1967; Thompson, 1967:27; Emery & Trist, 1965; Terreberry, 1968; Jurkowitz, 1974)

(3) the specificity or/and diffuseness of the goals of the organization (Katz & Kahn, 1966:265)

(4) the nature of the technology required to change the product or service (Davies, Dawson & Francis, 1973; Hickson, Pugh & Pheysey, 1969; Perrow, 1970)

These and other variables independently and interactively affect the modes of departmentalization of an institution. The weight of one or another of the variables cannot be known without extensive analysis of a particular institution. For example, an environmental contingency approach to the

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* For this study, structure refers only to the mode of departmentalization. In the literature, there are a wide variety of conceptions of organizational structure, including specification of activities, concentration of authority, line control of work flow, and relative size of work flow and relative size of supportive component (Pugh et al., 1968). We also exclude from the consideration of structure such variables as size, span of control and administrative component, which have been explored in the work of Blau et al., 1976. The argument is made that insofar as we are addressing ourselves to large traditional research universities, such variables are reasonably constant.

understanding of organizations would suggest that the first two of the above variables predominate as determining factors. These two are concerned with matters external to the organization. Taking this approach, one might explore the possibility of a university which is dominated by this kind of client or environmental influence.

Insert Exhibit I about here

In this exhibit we have attempted to identify some eight typical university clients and to characterize the varying expectations of these clients, the "turbulence" of their expectations and the degree to which they are able to be specific in their expectations of or demands on the university's output. We have also attempted to give some examples of common structural responses to each of these client demands in terms of sample operational goals and technologies. Thus, for example, as noted in Exhibit I, "parents" exert a relatively stable, sustained demand for what Daniel Bell (1966) calls historical, methodological and self-conscious for students. This seems to be a fairly consistent expectation that parents have of their children as college graduates (though they may not articulate it in quite these same words). Indeed, they will not be able to specify in particular what these expectations are in terms related to specific courses or pedagogy. On the other hand, within the university, faculty might translate that expectation into a course objective such as "know the history of Greece." The technology required to have the student acquire this information might include a synthesis of the data and its display to students in some verbal, written or electronic mode. Required interdependence among faculty in

Exhibit I

VARIABLES AFFECTING THE FORM OF DEPARTMENTALIZATION IN UNIVERSITIES

Cross-boundary Conditions				Internal Conditions			
					Technology		
Client	Environmental Turbulence[1]	Manifest System Goal (Client Expectation)	Goal Clarity[2]	Sample Operational Goal[3]	Product Class[4]	Sample Processes (Faculty Role)[5]	Task Interdependence
Parents	Low	1. Cognitive: Historical methodological; self-consciousness for students	Low	Know history of Greece	Data	Synthesis, Display	High
	Low	2. Affective: Personal growth for students	Low	Increased autonomy	People	Counseling Modeling	Med Low
	High	3. Career training for students	High	Selling skills	People	Training	Low
Knowledge Community (Academic)	Low	1. Elaboration and validation of old	High	Disproven theory	Data	Conduct survey	Low
	Low	2. Discovery of new	Low	New theory	Data	Synthesize	Low
		3. New sophisticated recruits to the profession	Low	Grad student knows research methods	Data	Synthesize Display	Med
Knowledge Community (Industry)	Med	1. Manpower req: skilled & trainable technicians	High	Selling skills	People	Training	Low
	Low	2. Upwardly mobile orientations or tolerance for blocks	Low	Experience in competition for grades	People	Testing	High
	High	3. New knowledge-practical findings	High	Export knowhow	Data	Writing Training	Low Low
	High	4. Human retooling-retraining, professionalization	High	Better skills	People	Training	Low
Government	Med	1. Aware & concerned citizens	Low	Know history of Greece; use in voting	Data People	Synthesis Training	High High
	Med	2. Leaders	Low	Skills	People	Training	High
Local Community	Med	1. Learning resource	Low	Available classes	Data	Scheduling	High
	Low	2. Culture center	High	Concerts	People	Scheduling	High
	High	3. Technical assistance	High	Sewer advice	Data	Synthesis	Low
	High	4. Participation in local community events	Med	Faculty in voter registration drive	People	Telephoning	Med
Undergraduate Students	High	1. Environment for development/pleasure	Low	Concern for learning	People	Counseling	Low
	Low	2. Knowledge	High	Why people behave	Data	Small classes	High
	Low	3. Certification	High	Degree	Data	Scheduling	Low
Graduate Students	Low	1. Programs leading to certification	High	Course in research methods	People	Small classes	Low
	Low	2. Knowledge and skills	High	Statistics	Data	Counseling	Low

1. The variability in the client population as well as the stability of the mean or normal expectation.
2. The degree to which the client is able to specify the expectation and/or the organization's output can be measured and evaluated.
3. The resultant of the technological transformation.
4. The classification of the primary raw material to be transformed. The U.S. Employment Service typology of people, data and things is used here.
5. The range of activities required to be performed is on a continuum of high to low requiring a repertory of personal/professional skills or programs for transforming the product.

*This table is informed by the discussions in Starbuck (1976); cf. Jurkovich (1974).

achieving this objective might be considered high (under "optimum" conditions of maximum faculty communication about their teaching objectivesand pedagogy). As shown in the exhibit, other ways of characterizing parental expectations (e.g., career training) will result in quite different goals and technologies.

Contrasting parental expectations with those of the knowledge community, one can see from Exhibit I that the elaboration and validation of old knowledge also has low environmental turbulence but high goal clarity. The technology associated with this university product is quite different from that in the first case. In the example given in the exhibit, faculty in the social sciences might conduct surveys as part of their research activities. Such a role requires relatively little interaction with colleagues.

The expectations of parents, on the one hand, and of the knowledge community, on the other, are thus similar in terms of environmental turbulence, but different on the dimensions of goal clarity and task interdependence. The stable nature of the environment might be used to suggest (at this point imprecisely) a kind of internal organizational structure which would maximize organizational efficiency and productivity. In the industrial sector, we would expect to find highly mechanistic, bureaucratic organizations under these circumstances. Let us explore somewhat further the nature of the perceived stability of environments external to institutions of higher learning.

Here the conservationist character of universities is paramount. As conservers of value (Parsons & Platt, 1973), institutions of higher education are expected to socialize students to accept most of the prevailing middle class norms and values of society (assertions in college catalogs stating objectives such as "develop critical thinking" notwithstanding). Too many

"radical" thinkers produced might upset the society by challenging the status quo in too threatening a way (viz. the perceived threat to the middle class in the 1960's). This kind of educational mission requires, of course, infrequent structural change within the institution. The demands of society are not only persisting, but since social values change slowly, the shifts in society's expectations of graduates of universities are gradual.

The research effort also is conservative in nature. New findings are warranted as valid only after considerable debate and testing. In addition, faculty and academic administrators in their graduate training have been socialized into the profession as conservatives. Hence, in these two primary missions, teaching and research, the stability of the environment would argue for an internal organizational structure which does not need to be readily adaptive.*

In its two other missions--knowledge dissemination (as differentiated from knowledge production) and community service--the university tends to depend more heavily and immediately on external events. The activities comprising these missions are more pragmatic, and the success of the institution depends on the degree to which it is able to sense contemporary social needs correctly. In contrast to the above, internal organizational structure might be expected to be more readily adaptive--more organic and flexible (Bennis, 1966; Katz & Kahn, 1978; Clark, 1956).

Returning to the exhibit, it can be seen that even within each of the missions, the university is involved with a number of external task

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* Under certain conditions, there are exceptions to the rule of university conservatism--as, for instance, when war or other environmental turbulence forces the society to make unusual demands on the university to be more immediately responsive to current events.

environments, each with quite different expectations and degrees of homogeneity and stability (Thompson, 1967:27). It would be reasonable to expect that for each distinguishable segment of the external system there would be a corresponding unit within the university with specialized personnel and other resources to address that client's needs (Dornbusch & Scott, 1975:77; Becker & Neuhauser, 1975:68; Simpson & Gulley, 1962; Baldridge, 1971). As we noted at the outset, this is obviously not the case in universities today. The academic department is an omnipurpose sub-unit attempting to address all of the various kinds of external demands. The rationale for the division of academic labor, however, does not necessarily follow the logic of contingency theory. Other explanations account for the present form of university organizational structure. It remains to be seen whether this more "contingent" approach would be more efficient and what disadvantages might result from a different form of differentiation.

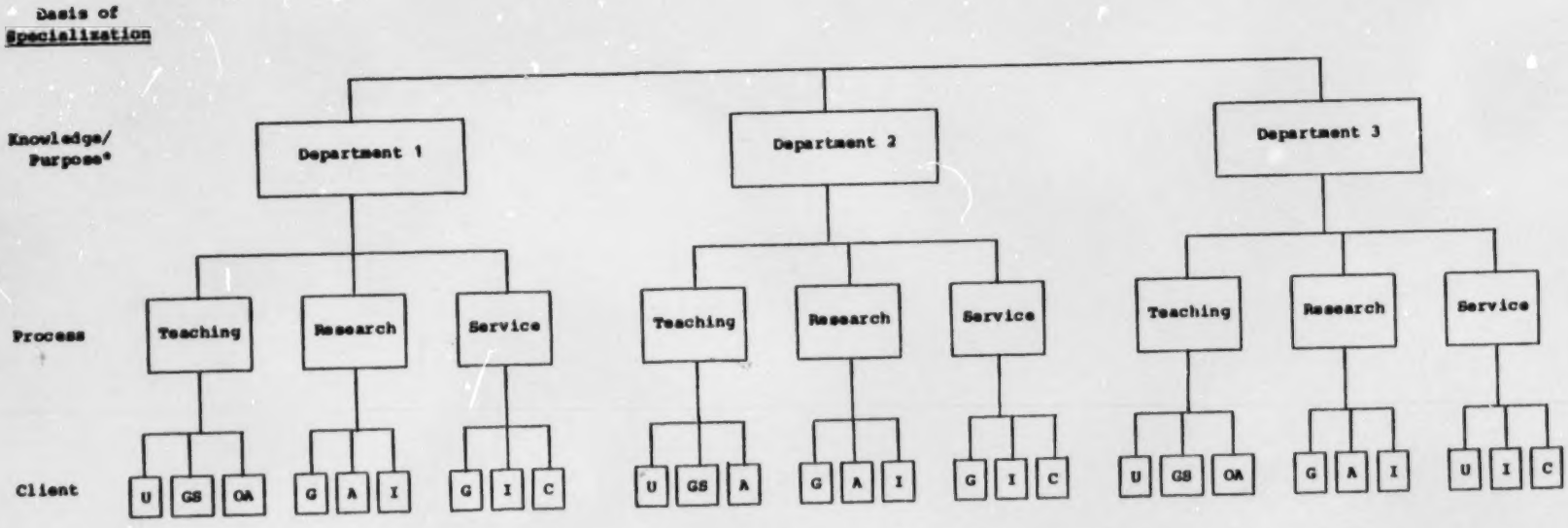
Models of University Organization

To explore this further, let us now turn to an examination of the current configurations in typical universities. Obviously in most there is no specialization of departments according to the variations in environment or in the technologies required to accomplish various tasks. Usually, the mode of division of labor is first by discipline, then by process (teaching, research, and service). On occasion there will be still another sub-division of each of the processes such that each of the clients of the university is addressed separately. In Exhibit II below, this model is displayed.

Insert Exhibit 2 about here

Exhibit II

UNIVERSITY ORGANIZATION - EXAMPLE A



(Key: U=Undergraduates GS=Graduate Students OA=Older Adults G=Government A=Academy I=Industry C=Community)

*By definition, "if all specialties needed to produce a given socially valued end product could be placed in one unit, that unit...would be departmentalized by purpose rather than by process" (Thompson, 1961, p. 45). Note, however, that in Exhibits III & IV, division by knowledge becomes only a further specialization of process.

As the reader will note, under this example faculty in each department are usually expected to be specialized with respect to nine clients as they perform in the three traditional processes in their own field of knowledge. In practice, of course, the three processes are broken down into an expanded set of specializations. As one example, teaching might be subdivided into specializations such as seminars and lectures, research into empirical and non-empirical, and service into internal and external consulting.* On occasion, one or more of the client groups might have a separately budgeted unit addressing its needs (e.g., continuing education).

It should be noted that because of the form of organization which obtains in most universities, some clients and processes are duplicated across departments. Obviously, students are clients of many departments. Due to this overlap in most universities, there is usually a large need for bureaucratic coordination. In contrast to industrial settings where coordination is mostly through formal scalar overview, in higher education normative or other models prevail. With respect to undergraduate students, student affairs personnel are employed to attend to some of the client expectations (see the earlier discussion of Exhibit I), while teaching is coordinated to some extent by academic affairs offices and by university-wide committees on teaching policy. It should be clear, of course, that especially in the latter case the kinds of coordination which might be needed to perform the teaching mission more effectively are not forthcoming

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*Other research conducted (Bess, 1977) reveals that there are as many as 320 distinct faculty specializations performed in the modern university. By historical accident and other pressures as noted above, we have aggregated these processes into three large groupings--teaching, research and service. However, other aggregates are possible and, indeed, potentially more logical and efficient.

under present departmental configurations. It is left to occasional meetings of standing faculty committees and perhaps to an ad hoc committee on teaching to manage the important cross-departmental linkages which some would submit are essential to the accomplishment of the goals of general and liberal education.* To reiterate the point made earlier, such cross-discipline linkages are now provided by the client, the student, with unknown degrees of efficiency. We rarely test the capacity of the student to make connections among his/her courses or test the levels of psycho-social maturity which might be presumed to result from general education pursued across disciplinary boundaries. This is not to argue that student "labor" should not be used; it is only to question whether it is being used as effectively as possible in achieving institutional goals. It also speaks to the interdependency of faculty and student teaching-learning efforts and of the organizational structures which serve them.

Before inquiring more fully into this question, let us examine several alternative forms of organization by simply transposing the layers of client, process and purpose or knowledge.

Insert Exhibits III & IV about here

Note that in Exhibit III the first mode of division of labor is by process (though, as noted earlier, grouping some of the teaching tasks together is more a matter of custom than task similarity--e.g., grading and lecturing). The second level is comprised of the nine clients mentioned above. At the third level in the ladder are the traditionally-named academic departments

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* As Lawrence & Lorsch (1967) note, such integrating units are often functional, but they must be staffed by committed professionals.

Exhibit III

UNIVERSITY ORGANIZATION - EXAMPLE B

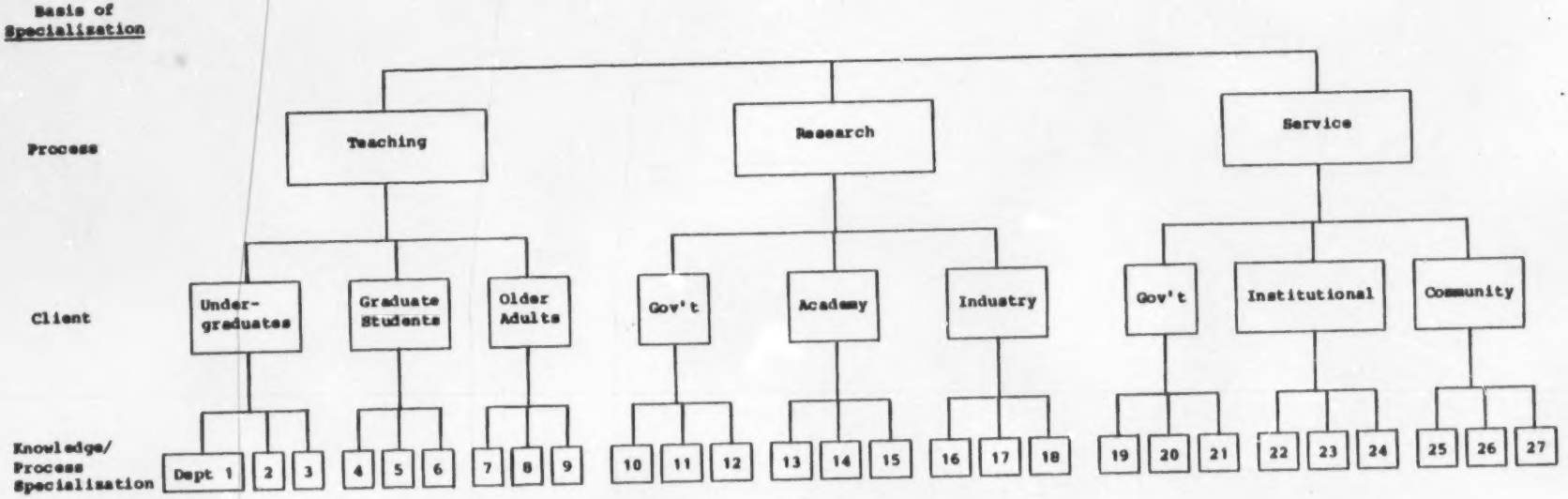
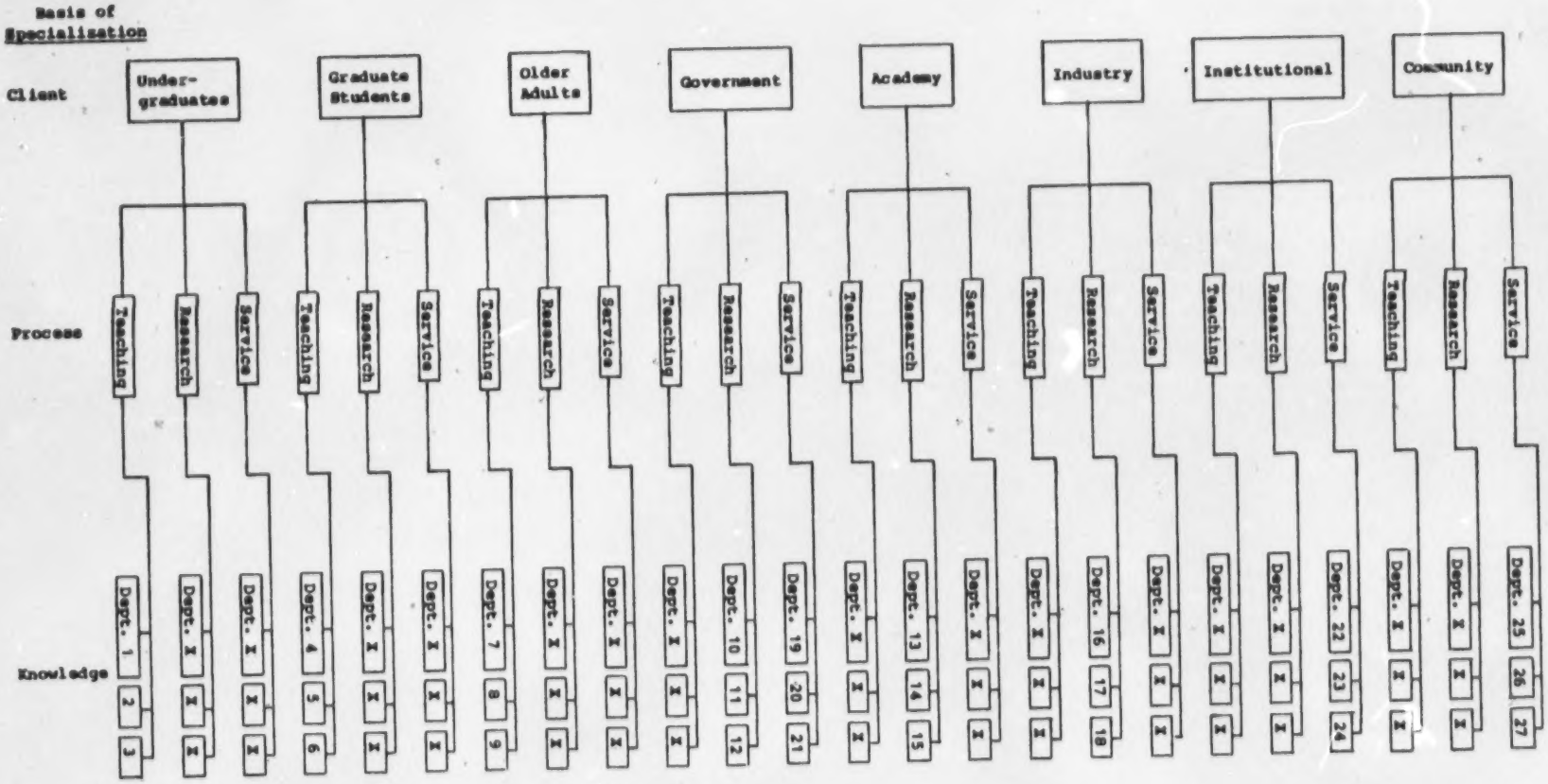


Exhibit IV

UNIVERSITY ORGANIZATION - EXAMPLE C*



*Not all process or knowledge boxes would be occupied under this structural arrangement.

of knowledge. In this case, however, the departmental faculty would be client and/or process specialists, rather than multi-functioned professionals, as they are now organized (as in Exhibit II). Thus, Department 1 might be comprised of experts in teaching undergraduates the field of sociology, while Department 10 would be research sociologists addressing themselves to the needs of governmental institutions. It is important to note the differences between this configuration and that in Exhibit II in terms of needs for coordination across sub-units. In the earlier exhibit, clients were required to provide the coordination across academic departments--less costly for the institution, to be sure, but at some cost in goal achievement. In Exhibit III, there would appear to be a reduction in the costs of cross-departmental communication. In Exhibit II, the faculty member in the unit designated I-Tu must reach across to his/her colleague in II-Tu to link the teaching efforts. In Exhibit III, the faculty member in department TU1 need only chat with his/her colleague in TU2. Both have the "U" designation in their affiliations, meaning that they each have a common client orientation. They each also have a more specialized "T" orientation, since, in contrast to faculty members in Department 1 in Exhibit II, who are multi-functioned specialists, these persons are (in this example) more narrowly specialized. Communication is not only easier, but the organizational arrangements are designed to accommodate faculty member specialized interests.

It is important to note that the structure in Exhibit III does not preclude the possibility of a teaching/undergraduate oriented specialist in Department 1 communicating with a research/government oriented specialist in Department 10. However, there is no organizational (as opposed to personal

or professional) need for such linkages across processes.* Such "reaching across" the units in the example in Exhibit III would be as easy or as difficult to do as it is now when sociologists and physicists in different departments wish to talk. There have been occasions when organizational structures such as that suggested in Exhibit III have been attempted at various times and instititutions, but they have generally not been successful. Two (avoidable) reasons for the failure are the invidious status distinctions which obtain across process specializations (e.g., research sociologists alleging themselves to be "better" than teaching sociologists) and the retention of the academic discipline as a "home" department. In the latter instance, faculty members are prevented from giving their full allegiance to the process unit. Again, with insights from March & Simon (1959, p. 152), we note that sub-optimization is a common proclivity of units in complex organizations. The division of labor itself predisposes the suborganization's members toward the goals of the subunit. Hence, the "type" of subunit created by the organizational design is, therefore, critical. The structure of contemporary university organization, in particular, constrains faculty to conceive of their primary obligations as dominated by the acquisition of knowledge, with processes and clients subordinated. If the primary mode of specialization were according to client, suboptimization would yield more loyalties toward client-centered activities.

In Exhibit IV, clients are the first cut in the division of labor. In many ways this organizational arrangement is similar to that in Exhibit III. It differs largely in the coordinating mode. In Exhibit III, a vice-president for teaching coordinates faculty in client-centered departments. He/she

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* See discussiodn by March & Simon (1959, p. 29).

must manage the efficiencies to be achieved through recognizing similarities among undergraduates, graduates and older adults. In Exhibit IV, on the other hand, a vice-president just for undergraduate education coordinated faculty in units concerned with all three processes--teaching, research and service. This person's primary coordinating responsibility is to see that the three services performed for undergraduates are linked--e.g., connecting pedagogy units with student services. This structure is not unlike that found in a small liberal arts college without research and graduate functions.

There are, of course, other permutations of the structure which can be generated from the three variables noted here. Thus, the hierarchical form could be knowledge-client-process, process-knowledge-client or client-knowledge-process. There are advantages and disadvantages of each, though some are rather obviously inefficient.

It should be clear that the two major considerations in determining which of these systems is most efficient are the expenses of bureaucratic coordination and the duplication of process/knowledge specialists (ignoring, for the moment, questions of quality of output). Organizational size (Rushing, 1967; Blau & Schoenherr, 1973) seem to have the greatest bearing on these questions. If the university is too small to have knowledge or knowledge/process specialists fully utilized in a decentralized, client (qua product) system, then it will assume the structure in Exhibit II. In a small college, for example, it is usually not possible to have an urban sociologist employed full time just teaching undergraduates, another just teaching graduate students, another doing research, etc. On the other hand, it is conceivable that in a very large university, there are sufficient demands by particular clients for such a volume of specialized services that

for a faculty member might be exclusively associated with one of the client units.

Universities have not moved in this direction, however. Even when size has been sufficient, faculty have preferred to be organized in academic departments specialized by knowledge. The reasons have been noted above. In this paper, we argue, however, that specialization by academic discipline is only one basis for departmentalization and not necessarily the best. It is further argued that task specialties can be organized around either processes or clients or knowledge or some combination of these.* At issue is whether organization along alternative task dimensions than at present would meet organizational objectives more efficiently and personal faculty goals more satisfactorily.

Efficient Division of Labor

Organizational efficiency can be improved through structural planning, according to several critical principles (Chapple & Sayles, 1961). First, the amount of inter-unit dependency should be as low as possible in order to minimize the costs of administrative coordination (Miller, 1959). Second, the amount of intra-unit loyalty and identification with unit goals and norms should be increased, subject to cost constraints and up to the point where optimization of sub-unit goals causes a costly diversion from the

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* Coleman (1973) points out that a client focus for departments would not be appropriate for all of the university's functions. In particular, discipline-oriented research has a time dimension which differs significantly from what he calls policy-oriented research with practical objectives. The first should be subject to colleague control, while the latter should be hierarchical. Coleman's scheme for differentiating the parts of the university into functional components is useful, though it does not go far enough. Moreover, we prefer to conceive of the professional associations as "clients" for discipline-oriented research.

goals of the institution as a whole (Selznick, 1957, p. 58; Dufty, 1966).

To reduce inter-unit dependency, sets of tasks or roles which are related to one another by necessary timing and sequencing can be grouped in self-contained units (Hickson, Pugh & Pheysey, 1969; Galbraith, 1973, p. 26; Lynton, 1969). In such units, all athe major resources needed to provide the service or produce the output are contained within the unit (Thompson, 1961, p. 45).

> For example, if the services of 15 different specialties are required to produce an organization's product lines, then a choice must be made when product divisions are created as to when services will be contained in the divisions and which will remain centralized in the corporate office. In general, the diversity of the outputs and the greater the task uncertainty, the greater the self-containment (Galbraith, 1973, p. 27).

The creation of self-contained units in a multi-purpose organization is facilitated by a specialization of function by task similarity (as opposed to specialization by person) serving the separate goals. This important relationship between specialization by person and specialization by task (Thompson, 1961, Ch. 3; Tyler, 1973) is discussed more fully below. The point here is that grouping related <u>tasks</u> instead of like-minded <u>people</u> together contributes to greater organizational effectiveness (Pelz & Andrews, 1966). The heterogeneity of tasks performed by professionals singularly oriented toward the outcomes of those tasks creates a cross-fertilization of ideas and an identification with recognizable unit goals contributing also to personal satisfaction (Hackman & Oldham, 1974).

Empirical research reported in the literature supports the notion that when such task-related units are also differentially structured to meet client needs in the external organizational environment which have varying degrees of uncertainty, there is a higher level of performance (Burns &

Stalker, 1961; Lawrence & Lorsch, 1967; Simpson & Gulley, 1962). Traditionally, in higher education, specialization has centered on the differences among the disciplines of knowledge, not difference among clients. As noted earlier, such a division serves the technology of research by making the department self-contained largely around research tasks, but it ill serves the other functions of the university--teaching and service. The timing and sequencing of tasks required for effective undergraduate teaching, for example, require a different sort of self-contained unit based not alone on knowledge of research content and skills but on pedagogical and other techniques. The aggregation into multi-purpose departments of multi-functional faculty who (allegedly) have mastered a number of personal specializations which match the goal structure of the department is not as efficient as the aggregation of more narrowly specialized faculty with the skills necessary to carry out required activities in self-contained task units, each of which is oriented toward only one of the goals of the institution.

Part of the problem of deciding which structure maximizes efficient operation lies in the choice of unit of analysis and the set of aims and objectives one is considering. For example, as most universities are now constituted, academic departments conceive of their teaching goals as the transmission of a reasonably comprehensive set of facts in the discipline. The department contains within it all the resources to accomplish that particular aim. But, considered from the institutional perspective, the objective of teaching in the university is (simplistically, for the moment) to have the student become apprized of multiple disciplinary perspectives.

Present-day departments conceive of themselves as related to other

departments through "pooled interdependence," where each unit contributes independently to the final product, but the failure of any one contributes to the failure of all (Thompson, 1967). In contrast, universities as total institutions tend to think of departments as having some sequential and reciprocal interdependence. Under this conception, the outputs of one department become the inputs of another or/and the products of each are the inputs for the other. The coordination needed to assure satisfactory if not exemplary levels of output under conditions of pooled interdependence is quite different from that required for sequential and reciprocal interdependence. The latter demands close communication so that the incoming "raw materials" have been honed to the proper "tolerances" (to stretch the metaphor) permitting the receiving unit to apply its own technology. As noted earlier, universities are not willing to provide the funds for such elaborate linkages, preferring to leave the problem of prerequisite tolerances to student decision, to high reject/failure/dropout rates and/or to low levels of quality.

Importantly, the persistence of the academic department, brought on by the dominance of research technologies, prevents the typical university from examining alternative structures which might permit the coordination required without jeopardizing preferred faculty specializations. Clearly, a move to either of the configurations in Exhibits III or IV above demands a reconsideration of the assumptions of multiple personal specialization, a subject we return to later. The point here is that under the assumption of pooled interdependence coordination among subunits which have quite different orientations requires less attention (and less funding) than do alternatives. Whether departments are indeed in such relationships is a question, as is

the issue of who pays the costs of coordination if they are not.

Inducing intra-unit loyalty and the strengthening of unit productivity norms (the second critical principle of efficient division of labor) raises the hazard that overall institutional objectives will be subordinated to the sub-unit's goals. This is a danger, however, primarily when the organization of the institution is by process, rather than product or client. In a multi-purpose institution when self-contained units are organized according to purpose, the maximization of unidimensional unit goals can be made to serve the institution's total objectives. As above, units organized by purpose are in a pooled relatioship with respect to their interdependence. Maximizing the subunit's goals can only contribute to the betterment of the total organization's objectives. Clearly, there will be cases when units attending to different institutional goals will find themselves in competition for scarce resources. But such conflicts can be resolved through other organizational and/or bureaucratic means. The point is that there is less need for costly inter-unit coordination and inter-dependency when the units are self-contained by client rather than professional academic background as at present.

There are obvious exceptions to this rule, of course. One is when a small amount of some process is required by a number of units but none of the units requires a full-time person (e.g., in a labor-intensive organization) or the full use of an expensive machine to perform the process. An example would be the urban sociologist cited earlier. There is, however, no necessity that the criterion of self-containment by which each of the institution's processes or functions is organized be the same (Gulick, 1937; Miller, 1959). Some institutional goals can best be achieved through organization by product, some by client, some by process, and some by place (Grimes,

Klein & Shull, 1972). As noted above, coupling specialized units with task environments of varying uncertainties is conducive to greater efficiency. Mechanistic-type work units are appropriate to stable environmental conditions while organic systems are better adapted to external conditions of continual change (Woodward, 1965). Given the variations in environmental uncertainty noted in Exhibit I, there is some reason to believe that some of the university's functions can be contained in process, some in product and some in client-oriented units.

There are then apparently three potentially competing principles for the efficient organization of universities: by task similarity, by client or by relationship to environmental uncertainty. Overlaying the decision as to which of these is most appropriate in particular instances are questions of individual satisfaction and personal growth. The questions of faculty motivation, productivity and satisfaction are beyond the scope of this particular paper. However, it should be clear that no discussion of organizational structure is complete without an analysis of the obverse side of organizational efficiency--personal growth and fulfillment of employees. There is some reason to believe that many faculty in universities are neither as fully productive nor as fully satisfied as they might be. Many explanations are possible, but it is suggested here that the structure of their work organizations may be a major contributing factor. The impact of alternative kinds of structure on the mental health of workers has been well-documented. In this paper different kinds of university organizations viewed from the perspective of organizational efficiency have been considered. It would be well to question also whether contemporary forms of university organization are efficient in contributing toward faculty motivation and satisfaction.

References

Baldridge, J. Victor & Terrence E. Deal, Managing Change in Educational Organizations, Berkeley: McCutchan Publishing Corporation, 1975.

Becker, Selwyn & Duncan Neuhauser, The Efficient Organization, New York: Elsevier Scientific Publishing, 1975.

Bell, Daniel, The Reforming of General Education, New York: Columbia University Press, 1966.

Bennis, Warren G. Changing Organizations, New York: McGraw Hill Book Co., 1966.

Bess, James L., "The Acdemic Profession in Transition," Higher Education Review, Fall, 1977, 1, 1.

Blau, Peter M. & W. Richard Scott, Formal Organizations, San Francisco: Chandler Publishing Company, 1962.

Blau, Peter M. & Richard A. Schoenherr, The Structure of Organizations, New York: Basic Books, Publishers, 1971.

Burns, Tom & G.M. Stalker, The Management of Innovation, London, The Tavistock Institute, 1961.

Chapple, Eliot & Leonard R. Sayles, "The Measure of Management," New York: The Macmillan Company, 1961.

Clark, Burton R. Adult Education in Transition, Berkeley: University of California Press, 1968.

Coleman, James S., "The University and Society's New Demands Upon It," in Carl Kaysen (ed.), Content and Context, New York: McGraw Hill Book Co., Inc., 1973.

Dornbusch, Sanford M. & W. Richard Scott, Evaluation and the Exercise of Authority, San Francisco: Jossey-Bass Publishers, Inc., 1975.

Dufty, N., "A Note on Departmentalization in an Institute of Technology," The Journal of Educational Administration, May, 1966, 4, 1.

Durkheim, Emile, The Division of Labor in Society, translated by George Simpson, New York: The Macmillan Co., 1933.

Emery, Fred E. & Eric L. Trist, "The Causal Texture of Organizational Environment," Human Relations, 1965, 18.

Etzioni, Amitai, Modern Organizations, Englewood Cliffs, N.J.: Prentice-Hall, 1964.

Freidson, Eliot, "The Division of Labor as Social Interaction," Social Problems, February, 1976, 23, 3.

Friedlander, Frank, "The Relationship of Task and Human Conditions to Effective Organizational Structure," in Bernard M. Bass, Robert Cooper & John A. Haas (eds.), Managing for Accomplishment, Lexington, Mass.: Heath Lexington Books, 1970.

Galbraith, Jay, Designing Complex Organizations, Reading, Mass.: Addison-Wesley Publishing, 1973.

Grimes, A.J., S.M. Klein & F.A. Shull, "Matrix Model: A Selective Empirical Test," Academy of Management Journal, March, 1972, 15, 1.

Gulick, Luther, "Notes on the Theory of Organization," in Luther Gulick & L. Urwick (eds.), Papers on the Science of Administration, New York: Institute of Public Administration, 1937.

Hackman, J. Richard & Greg R. Oldham, "Motivation Through the Design of Work," Technical Report #6, Department of Administrative Sciences, Yale University, December, 1974.

Hickson, David J., D.S. Pugh & Diana C. Pheysey, "Operations Technology and Formal Organization: An Empirical Reappraisal," Administrative Science Quarterly, September, 1969, 14, 3.

Hughes, Everett C., Men and Their Work, Glencoe, The Free Press, 1958.

Jurkovich, Ray, "A Core Typology of Organizational Environments," Administrative Science Quarterly, September, 1974, 19, 3.

Katz, Daniel & Robert L. Kahn, The Social Psychology of Organizations, New York: John Wiley & Sons, Inc., 1966.

Lawrence, Paul R. & Jay W. Lorsch, Organization and Environment, Boston, Harvard University Press, 1967.

Lazarsfeld, Paul F. & Amitai Etzioni, "Innovation in Higher Education," Columbia University, New York, Unpublished Ms., 1971.

Lewis, Lionel L., Scaling the Ivory Tower, Baltimore, The Johns Hopkins Press, 1975.

Lynton, Rolf P., "Linking an Innovative System Into the System," Administrative Science Quarterly, September, 1969, 14, 3.

March, James G. & Herbert A. Simon, Organizations, New York: John Wiley & Sons, 1959.

Miller, Eric J., "Technology, Territory and Time," Human Relations, 1959, 7.

Parsons, Talcott & Gerald M. Platt, The American University, Cambridge: Harvard University Press, 1973.

Pelz, Donald C. & Frank M. Andrews, "Autonomy, Coordination, and Stimulation in Relation to Scientific Achievement," Behavioral Science, March, 1966, 11.

Perrow, Charles, Organizational Analysis: A Sociological View, Belmont, Calif.: Wadsworth Publishing Company, Inc., 1970.

Rushing, William A., "The Effects of Industry Size and Division of Labor in Administration," Administrative Science Quarterly, September, 1967, 12, 2.

Selznick, Philip, Leadership in Administration, Evanston, Ill.: Row, Peterson & Co., 1957.

Simpson, Richard L. & William H. Gulley, "Goals, Environmental Pressures, and Organizational Characteristics," American Sociological Review, June, 1962, 27, 3.

Starbuck, William H., "Organizations and Their Environments," in Marvin D. Dunnette (ed.), Handbook of Industrial and Organizational Psychology, Chicago: Rand McNally College Publishing Company, 1976.

Terreberry, Shirley, "The Evolution of Organizational Environments," Administrative Science Quarterly, March, 1968, 12, 4.

Thompson, James D., Organizations in Action, New York: McGraw Hill Book Co., 1967.

Thompson, Victor A., Modern Organization, New York: Alfred A. Knopf, Inc., 1961.

Toennies, Ferdinand, Community and Society (Gemeinschaft und Gesellschaft), translated by Charles P. Loomis, East Lansing: Michigan State University Press, 1957.

Tyler, William B., "Measuring Organizational Specialization: The Concept of Role Variety," Administrative Science Quarterly, September, 1973, 18, 3.

Warner, W. Keith & A. Eugene Havens, "Goal Displacement and the Intangibility of Organizational Goals," Administrative Science Quarterly, March, 1968, 12, 4.

Woodward, Joan, Industrial Organization: Theory and Practice, London: Oxford University Press, 1965.